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1600 63rd Street . Brooklyn, NY 11204
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PYLE® USER'S MANUAL

PHCT70

Network Cable Tester W/ UTP, STP, BNC Coaxial, Telephone Continuity, Short Circuit, Open Connection, Length Test & Test Leads Included

Function & Features

- One person enough to complete cable continuity check.
- Check wiring error in 5E, 6E, coaxial cable and telephone line
- such as open circuit, short circuit, jumper wire, reverse connection or cross-talk interference.
- Locate the wiring or connection error.
- Measure cable length and determine the distance of open circuit and short circuit.
- Dynamically calibrate cable length and make length measurement as accurate as 97%.
- Simple and easy use. Big screen to display test result clear.
- Portable unit with long battery life (wait-case 50 hours).
- Automatically time-delay shut off.
- Measure length and pair with or without far-end recognizer.
- Locate cable and there are 8 far-end passive test jacks (ID No. ID1-ID 8).
- Far-end recognizer with prompting voice.
- Self-checking function and automatically compensate any change in battery capacity or ambient temperature.
- Single board computer software watchdog design and reliable operation.

● Coaxial cable and telephone line measurement function:

After entering into coaxial cable and telephone line measurement (Coax/Tel) function, the tester shall have test and show the test result as follows:

```
COAX/TEL TEST:
   PASS
```

It shall display "OPEN" if there is any open circuit or the coaxial cable and telephone line is not connected. It shall display "SHORT" if there is any short circuit.
At the moment, push ▲▼ key to repeat the measurement or push PAIR&L key to return the main menu. The far-end recognizer will have beep prompt sound if the connection is in normal condition.

> **Note:** For coaxial cable measurement, it needs accessories: two (2) BNC matchers. One is used to connect M port RJ45 and the cable to be checked and the another is used to connect the far-end matcher R port and the cable to be checked.
> For telephone line measurement, it needs accessories: two (2) RJ11 matchers.
> One is used to connect M port RJ45 and the cable to be checked and the another is used to connect the far-end matcher R port and the cable to be checked.

Test Result 2: Normal pair and length (PAIR & LENGTH) display

It will display as follows if pair and length (PAIR & LENGTH) measurement is in normal condition:

```
Pair 12 100.0M
Pair 36 100.2M
Pair 45 100.1M
Pair 78  99.7M
```

In which, the figure (e.g. 12) after the pair is the pair line number and it is the length after the line number.
At the moment, push ▲▼ key to restart test or push PAIR&L key to return the main menu.

Test Result 3: Abnormal pair and length (PAIR & LENGTH) display

It will display the paired lines first if there is unpaired lines in the pair and length (PAIR & LENGTH) measurement:

```
Pair 12 100.0M
Pair 36 100.2M
Pair 45 100.1M
78          ▼
```

In which, the last line (78▼) indicates there is no pair is found in lines 7 and 8, at the moment, it will display the length of unpaired line number (as shown below): if you push the ▼ key: (Or push PAIR&L key to return the main menu)

```
Pin 7  100.0M
Pin 8   89.7M X

       ▲
```

It will display "X" to indicate an open circuit if the length is less than 90% of other line pair length and the open circuit is located at around 89.7 M from the tester. (The open circuit line number could be rechecked by WIREMAP function.)
At the moment, push ▲ key to go back previous picture and push ▼ key to show further unpaired line number length. (Or push PAIR&L key to return the main menu)

Technical Specification

(1). Overall Dimension
180 x 80 x 40 mm
(2). Power Supply
4 x 1.5V Size AA batteries with power consumption 16 mA
(3). Display
Special 4 x 16 character big screen LCD lattice (valid visual field 61.6 x 25.2 mm)
(4). Type of Test Cable
STP/UTP twin twisted cable, coaxial cable, telephone line
(5). Working Ambient Temperature
-10℃ —— +60℃
(6). Tester Port
Tester RJ45 master port (M), tester LOOPBACK RJ45 port (L), far-end recognizer RJ45 port (R). The extra BNC and RJ11 converters are used to measure and check the continuity of coaxial cable and telephone line.
(7). Length Measurement of Twin Twisted Cable
Scope: 1 350 M (3 1,200 ft)
Calibration accuracy: 3% (+/- 0.5M or +/- 1.5 ft) (calibrating cable > 5 M)
Shipment accuracy: 5% (+/- 0.5 M or +/- 1.5 ft). (AMP, AT&T Class 5 cable)
Display: M or ft.
(8). Length Calibration:
User can set calibration factor by himself with a given length cable. The length of calibrating cable is more than 5 M.
(9). Wire Sequence and Locating Cable Error:
Check errors such as open circuit, short circuit, reverse connection, cross-over or cross-talk interference.
(10). Locating Cable
8 far-end passive test jacks (ID 1 ≥ ID 8).
(11). Automatic Time-delay Shut Off Time:
The tester does not operate for 30 minutes.

It will display as follows if the cable length being measured is too short (< 5M) to remind the user to change a longer cable for calibration:

```
Cable too short!
Continue.  Cal
NO        YES
```

At the moment, push ▼ key (No) to exit calibration function. Push ▲ key (Yes) to repeat the measurement.

It will display as follows if there is an open circuit in the measuring cable length to remind the user to change a normal cable for calibration:

```
SHORT
12
  Continue?
No          Yes
```

At the moment, push ▼ key (No) to exit calibration function. Push ▲ key (Yes) to repeat the measurement.

> **Note:** If the tester is restarted after it shuts off, the tester will recover the standard calibration factor of Class UTP5 cable as setup before shipment.

1. The tester uses 6V DC as the power supply only.
2. Strictly forbid to switch on tester under the situation that it links any other power supplies except power supply in tester itself.Otherwise it will break power supply chip and influence use. .
3. For an economic use of battery,the tester will shut off automatically if it does not work for 30 minutes in succession.

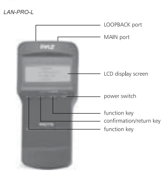
Interface and Key Description

Power Supply

The tester uses 4 x 1.5V Size AA alkaline batteries with power consumption 16 mA. The batteries should be taken out if the tester does not use for a long time to prevent the battery rack from leaking electrolyte corrosion.

Tester Panel and Port

LAN-PRO-L



● Pair and length measurement (PAIR & LENGTH) function:

No matter whether there is a far-end recognizer (ID) at the far-end of the cable, the tester is capable to have pair and length (PAIR & LENGTH) measurement. Therefore, the far-end recognizer (ID) can keep connected in the course of wiring diagram (WIREMAP) and pair and length (PAIR & LENGTH) measurement to avoid repeated insertion and pulling out.
After entering into pair and length (PAIR & LENGTH) measurement function, the tester shall have pair and length (PAIR & LENGTH) test and it will display as follows to indicate the measurement is being undertaken:

```
-----TESTING-----
12345678...
```

> **Note:** In view of different technical parameters in various brand cables, the user should apply the tester dynamic calibration function before length measurement (Refer to the details herein).

Test Result 1: Short circuit (SHORT)

It will display as follows if there is any short circuit in cable or terminal: (12 short circuit in the sample)

```
SHORT:
12
```

(The tester is incapable to know the exact location of short circuit.)
At the moment, push ▲▼ key to restart test or push PAIR&L key to return the main menu.
Always correct short circuit error first and then start further measurement.

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● Dynamic calibration (CALIBRATION) function:

(Another way to quickly enter into dynamic calibration: hold PAIR&L key while start the tester)
For an accurate measurement of cable length, the calibration operation should be done as follows.
After entering into dynamic calibration function, the tester shall display as follows:

```
CALIBRATION!
NO    YES
```

Push ▼ key (No) to exit calibration function.
Insert same type cable of given length into "M" port, do not need insert far-end recognizer, push ▲ key (Yes) to undertake measurement and display the measured length (as shown below):

```
Please  adjust?
20.0M
-    OK     +
```

At the moment, hold ▼ and ▲ key (-/+) to display the length to be adjusted to actual given length and then push PAIR&L key to reserve calibration factor and exit calibration function.

Test Result 5: Wiring diagram (WIREMAP) display when there is an open circuit at the near-end of cable.

It will display wiring diagram (WIREMAP) as follows if there is an open circuit at the near-end plug of the cable:

```
WIRE MAP: FAIL
R: 12345678  ID
   ||||||||
M: 12x45678
```

"M:" line "3" pin location displays "x", it indicates an open circuit at near-end plug "3" pin and the open circuit is located nearby the near-end plug. (The open circuit should be located within 10% cable length if it is measured from the near-end plug)

Test Result 6: Wiring diagram (WIREMAP) display when there is an open circuit in the middle of the cable.

It will display wiring diagram (WIREMAP) as follows if there is an open circuit in the middle of the cable:

```
WIRE MAP: FAIL
R: 12345678  ID
   ||x|||||
M: 12345678
```

"|" line "3" pin location displays "x", it indicates an open circuit in the middle of "3" pin cable. (The open circuit should be located within 10% - 90% cable length if it is measured from the near-end plug.) For further locating open circuit, the pair and length function (PAIR & LENGTH) of the tester could used as detailed hereinafter.

Operation Procedures

Start and display:

Carry out self-checking at the same time (The dotted line dynamically displays the course of self-checking from left to right):

```
NetWork Cable Tester
```

5 seconds or push any arbitrary key to display main menu.

Main menu display:

```
->1.WireMap
  2.Pair&Length
  3.Coax/Tel
  4.Setup
```

There are four functions to be chosen on main menu.

1. WireMap — Wiring diagram measurement to check end-to-end continuity of cables M, L, R and locate error.
2. Pair & Length -— Pair and measure length to verify cable length, open circuit distance, pairing and cross-talk interference.
3. Coax/Tel -— Coaxial cable and telephone line measurement to check continuity and indicate open circuit and short circuit.
4. SETUP -— Calibrate and set up the tester (Refer to description hereinafter).

With main menu display, push ▲ ▼ key to move cursor "->" indicator up and down to desired item and then push PAIR&L key to enter related test function accordingly.

● Calibration and setup (SETUP) function:

After entering into calibration and setup (SETUP) function, the tester shall display as follows:

```
-----SETUP-----
->UNIT: Meter
  CALIBRATION
QUIT
```

Push ▲▼ key to move cursor "->" indicator up and down to the desired item and then push PAIR&L key to enter related setup function accordingly.
UNIT: It is used to set up length unit and shifts between meter (Meter) and feet (FT).
CALIBRATION is calibration function. (Detailed as related chapters hereinafter)
QUIT is used to return the main menu.

Preface

NetWork Cable Tester is a powerful special tool to prevent and solve cable installation problem. NetWork Cable Tester is the best choice to verify any speech and data cable installation procedure. The tester is capable to have a number of tests such as cable connection sequence, length, user jumper and cable connection continuity and determine any open circuit, short circuit, jumper or cross-talk interference. It is a useful tool to reduce cable installation cost and save cable installation time.

● Wiring diagram (WIREMAP) test function:

After entering the wiring diagram (WIREMAP) test function, the tester shall carry out wiring diagram (WIREMAP) test and displays as follows while checking is being undertaken:

```
-----TESTING-----
12345678...
```

Test Result 1: Short circuit (SHORT)

It displays as follows if there is any short circuit in cable or terminal: (e.g. 12 short circuit in the sample)

```
SHORT:
12
```

At the moment, push ▲▼ key to restart testing or push PAIR&L key to return main menu.
Always correct short circuit error first and then start further measurement.

Test Result 2: Neither far-end matcher (ID) is found nor cable inserts local port (L)

The tester will automatically detect far-end matcher (ID) or local port (L) cable and it will display as follows if the far-end of cable to be checked does not insert into the far-end matcher (ID) or if the cable does not insert into the local port (L) in local test:

```
NO ADAPTER:
```

At the moment, push ▲▼ key to restart testing or push PAIR&L key to return main menu.

Test Result 3: Normal wiring diagram (WIREMAP) display

The tester will automatically detect far-end matcher (ID) or local port (L) cable and it will display wiring diagram (WIREMAP) as follows if it is found the far-end matcher (ID) or the local port (L) on the far-end of cable to be checked:

```
WIRE MAP: PASS
R: 12345678  ID
   ||||||||
M: 12345678
```

"R:" line shows RJ45 jack pin number of far-end port and "ID1" is the far-end matcher number.
"|" line shows the connecting line between far-end port and master port.
"M:" line shows the RJ45 jack pin number of master port.
At the moment, push ▲▼ key to restart testing or push PAIR&L key to return main menu.

Test Result 4: Wiring diagram (WIREMAP) display when there is an open circuit at the far-end of cable.

```
WIRE MAP: FAIL
R: 12x45x78  ID
   ||||||||
M: 12345678
```

"R:" line "3" and "6" pins location display "x", it indicates an open circuit in far-end plug "3" and "6" pins and the open circuit is located nearby the far-end plug.(The open circuit should be located within 10% cable length if it is measured from the far-end plug)

> **Note:** If you use far-end matcher (ID) to measure wiring diagram (WIREMAP), because the test is made via the paired two cable cores, the open circuit at the far-end always displays in pair as shown above where there is one open circuit or all are open circuits in the far-end "3" and "6"pins. For identification, it is simple to move the tester to the far-end to have the measurement.